It is respectfully submitted that the rejection of claim 16 is obviated with the cancellation of claim 16.

In the outstanding Official Action, claims 13-16 were rejected for allegedly being anticipated by ROWE et al. This rejection is respectfully traversed.

In the present amendment, claim 13 recites that the polypeptide is capable of binding to a negatively charged heparan sulfate or heparan sulfate-like molecule. It is respectfully submitted that ROWE et al. would fail to meet this limitation.

The polypeptide sequence described by ROWE et al. and expressed by the R29 parasite, and the polypeptide sequence of the present invention are distinct. The Examiner's attention is respectfully directed to the present specification at page 48, second paragraph. The present specification clearly discloses that heparinase treatment disrupts the rosettes of the parasite expressing a novel sequence. However, the heparinase treatment failed to disrupt the rosettes of the R29 strain described by ROWE et al.

As noted in the present specification, heparan sulfate is a molecule present in all cells, including erythrocytes. The deletion of rosettes by heparinase treatment of normal red blood cells provides confirmation of the specific ligand-receptor interaction involved in the binding mechanism of *P. falciparum*. Heparinase treatment disrupts the rosettes of the parasite

expressed in the novel sequence of the present invention. However, heparinase treatment failed to disrupt the rosettes of the R29 strain described by ROWE et al. It is respectfully submitted then that ROWE et al. would fail to provide a polypeptide capable of binding to a negatively charged heparan sulfate or heparan sulfate-like molecule.

Thus, ROWE et al. fail to disclose each and every recitation of the claimed invention.

Claims 13 and 17 were rejected under 35 USC 103(a) as allegedly being unpatentable over ROWE et al. in view of SU et al.

However, it is respectfully submitted that SU et al. fail to remedy the deficiencies of ROWE et al. The outstanding Official Action contends that ROWE et al. has taught that binding of infected erythrocytes to endothelial cells is mediated by PfEMP1 and is encoded by a *var* gene. Furthermore, the outstanding Official Action contends that SU et al. has taught that *var* genes encode 200 to 350 kiloDalton proteins in *P. falciparium*.

However, it is respectfully submitted that one of ordinary skill in the art would lack the motivation to combine ROWE et al. with SU et al. The present invention is directed to a polypeptide originating from a malaria erythrocyte membrane protein which is capable of binding to negatively charged heparan sulfate or heparan sulfate-like molecules. ROWE

et al. teach a PfEMP1 molecule that binds with ER1 and is a parasite ligand. SU et al. teach a PfEMP1 that is merely a parasite ligand with a range of 200 to 350 kiloDalton. SU et al. fail to describe the function of PfEMP1. One of ordinary skill in the art would lack the motivation to combine these two disclosures.

More importantly, even if one of ordinary skill in the art were to combine the two publications, the combination would still not result in the present invention. As noted above, the present invention is directed to a polypeptide originating from malaria erythrocyte membrane protein which is capable of binding to negatively charged heparan sulfate or heparan sulfate-like molecules. ROWE et al. teach away from this recitation and SU et al. fail to disclose this recitation.

Claims 13, 21 and 23 were also rejected under 35 USC 103(a) as being unpatentable over ROWE et al. in view of BARUCH et al. This rejection is respectfully traversed.

It is respectfully submitted that BARUCH et al. also fail to remedy the deficiencies of ROWE et al. BARUCH et al. teach malarial medicaments comprising a PfEMP1 protein.

BARUCH et al. fail to disclose that heparinase treatment disrupts rosettes in the parasite expressing the novel sequence of the present invention. Thus, BARUCH et al.'s medicament is distinct from the present invention. ROWE et al. in combination with BARUCH et al. would not result in a

polypeptide malarial medicament of the present invention. BARUCH et al. and ROWE et al. fail to render obvious the present invention.

In light of the present amendment, applicants respectfully believe that the present application is in condition for allowance. The present amendment incorporates the recitation of claim 16 into independent claims 13, 33 and 35. Furthermore the present amendment addresses the contention that claims 16 and 36 were indefinite. It is respectfully submitted that no new issues have been raised. As such, the entry of the present amendment and allowance and passage to issue of the present application is earnestly solicited.

If the Examiner has any questions or requires clarification, the Examiner may contact the undersigned attorney so that this application may continue to be expeditiously advanced.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE IN THE CLAIMS:

Claim 13 has been amended as follows:

13. (twice amended) An isolated polypeptide originating from a malaria erythrocyte membrane protein comprising an amino-terminal part of the sequence according to SEQ ID NO:1, wherein said polypeptide is capable of binding to a negatively charged heparan sulfate or heparan sulfate-like molecule.

Claim 33 has been amended as follows:

33. (amended) A medicament made from a polypeptide [having] originating from a malaria erythrocyte membrane protein comprising an amino-terminal part of the sequence according to SEQ ID NO:1, wherein said polypeptide is capable of binding to a negatively charged heparan sulfate or heparan sulfate-like molecule.

Claim 34 has been amended as follows:

34. (amended) A medicament according to claim [22 with a] 33 for the treatment or prevention of malaria, or vaccination against malaria.

Claim 35 has been amended as follows:

35. (amended) An isolated polypeptide originating from a malaria erythrocyte membrane protein comprising an amino-terminal part of the sequence according to SEQ ID NO:1, wherein the polypeptides bind to malaria-infected erythrocytes membrane protein, and [the polypeptide does not bind to complement receptor 1 or intercellular adhesion molecule 1] wherein said polypeptide is capable of binding to a negatively charged heparan sulfate or heparan sulfate-like molecule.

Claim 36 has been amended as follows:

36. (amended) A polypeptide according to claim 13, comprising domain DBL-1 having 423 amino acids of the sequence according to SEQ ID NO:1 [or an analog thereof].

Claim 38 has been amended as follows:

38. (amended) A [pharmaceutical] composition comprising a polypeptide according to claim 13 in a vaccine.